

What is claimed is:

1. A standing seam assembly in which adjacent panels are supported by underlying support structure in overlapping edge relationship to form an assembly resistant to sideslipping when subjected to applied forces, the assembly comprising:
 - 5 a first panel having a female sidelap portion comprising a female cavity;
 - a second panel having male sidelap portion lockingly disposed in the female cavity of the first roof panel thereby forming a standing seam between the first and second panels; and
 - 10 means for increasing the sidelap shear capacity of the first and second panels so the that the first and second panels resist side slipping in the standing seam under applied forces.
2. The standing seam of assembly of claim 1 wherein the means for increasing sidelap shear capacity comprises:
 - 15 at least one pair of backer plates, one against each of the female sidelap portion and the male sidelap portion of the first and second roof panels, respectively;
 - fastening means interconnecting the pair of backer plates for exerting a pressing force against and sandwich the female sidelap and male sidelap in the
 - 20 standing seam.
3. The standing seam assembly of claim 1 wherein the means for increasing sidelap shear capacity comprises:

a cinch plate disposed on one of the first and second roof panels; and
a backer plate extending under the first and second roof panels;
fastener means extending through the supporting roof panel for interconnecting
the cinch plate and the backer plate to sandwich the supporting roof panel
to the backer plate; and
fastener means for attaching the backer plate to the underlying support structure.

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4. A standing seam roof assembly in which adjacent roof panels are
supported by underlying support structure in overlapping edge relationship to form a
standing seam resistant to side slipping when subjected to applied forces, the standing
seam roof assembly comprising:

a first panel having a female sidelap portion which forms a male insertion cavity;
a second panel having a male sidelap portion receivingly lockingly disposed in
the male insertion cavity to form the standing seam; and

means for increasing the sidelap shear capacity of the standing seam of the roof
panels so the first and second panels resist side slipping under the forces of
wind uplift.

5. The standing seam roof assembly of claim 4 wherein the means for
increasing sidelap shear capacity comprises:

a plurality of backer plates disposed against the female sidelap portion and the
male sidelap portion on opposing sides thereof;

fastening means interconnecting pairs the backer plates and sandwiching the female sidelap and male sidelap in pressing engagement to increase resistance of the standing seam to slipping.

6. The standing seam roof assembly of claim 4 wherein the means for increasing sidelap shear capacity comprises:

a backer plate extending under the roof panels;

fastener means connecting the backer plate and the roof panel.

7. The standing seam assembly of Claim 1 wherein the assembly is a metal standing seam roof assembly

8. A standing seam roof assembly in which adjacent roof panels are supported by underlying support structure in overlapping edge relationship to form standing seams between adjacent roof panels, the roof panels resistant to sideslipping when subjected to uplift forces, the standing seam roof assembly comprising:

a first roof panel having female sidelap portion means forming a male insertion cavity;

a second roof panel having male sidelap portion means forming a male insertion portion lockingly engageable in the male insertion cavity, wherein the male sidelap portion is inserted into the male insertion cavity to form a standing seam joining the first and second roof panels;

means for increasing the sidelap shear capacity of the adjacent roof panels so that the panels resist side slipping under shearing loading.

9. The standing seam roof assembly of claim 7 wherein the means for increasing sidelap shear capacity comprises:

at least one pair of backer plates disposed on opposing sides of the standing seam and against the female sidelap portion and the male sidelap portion of the first and second roof panels;

fastening means interconnecting the backer plates for sandwiching the female sidelap and male sidelap in the standing seam to increase the frictional force there between.

10. The standing seam roof assembly of claim 7 wherein the means for increasing sidelap shear capacity comprises:

- a cinch plate disposed on one of the first and second roof panels; and
- a backer plate extending under the first and second roof panels;
- fastener means extending through the supporting roof panel for interconnecting the cinch plate and the backer plate to sandwich the supporting roof panel to the backer plate; and
- fastener means for attaching the backer plate to the underlying support structure.

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11. A roof having adjacently disposed panels supported by underlying support structure in overlapping edge relationship to form a standing seams between adjacent roof panels, comprising:

each roof panel having a female sidelap portion forming a male insertion cavity;

each roof panel having male sidelap portion forming a male insertion portion

lockingly engageable in the male insertion cavity of the roof panel adjacent

thereto, wherein the male sidelap portion is inserted into the male insertion

cavity to form the standing seams joining the adjacently disposed roof

panels;

means for increasing the sidelap shear capacity of the roof panels so the that the

panels resist side slipping under shearing loading.

12. The standing seam roof assembly of claim 10 wherein the means for increasing sidelap shear capacity comprises:

a plurality of backer plates disposed on opposing sides of the standing seams and

against the female sidelap portions and the male sidelap portions of the

panels;

fastening means connecting pairs of the backer plates for sandwiching the

standing seams to exert friction increasing pressure on the standing seams

to resist slipping thereof when subjected to diaphragm loading.

13. The standing seam roof assembly of claim 10 wherein the means for increasing sidelap shear capacity comprises:

cinch plate supported on one the roof panels between the standing seams; and
at least one backer member extending under the panels;
fastener means extending through the supporting roof panels interconnecting the
cinch plates and the backer plates to sandwich the roof panels between the
cinch plates and the backer plate; and
fastener means for attaching the backer plate to the underlying support structure.

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